EUROPEAN COMMISSION
Information Society and Media Directorate General

Lisbon Strategy and Policies for the Information Society
Lisbon Strategy and i2010

Use of Computers and the Internet in Schools in Europe 2006

Country Brief: Poland

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Key findings

Almost all Polish schools now use computers for teaching (95%) and have internet access (93%). However, only 28% use the internet via a broadband connection. With this figure Poland ranks second last among the 27 countries participating in the survey. As a consequence the majority of Polish schools (46%) are still connected to the internet through a narrowband dial-up connection which is five times higher than the European average and by far the highest figure in Europe.

There is a large variation between school types: while only 20% of primary schools have a broadband internet connection, the penetration is highest among upper secondary schools, with 40% and vocational schools reaching 42%. There is also some variation with regard to broadband access between urban and rural areas: 40% of schools in densely populated areas have broadband access compared to 21% of schools in thinly populated areas.

Only 61% of Polish classroom teachers had used computers in class in the 12 months prior to the survey, with very little variation across school types and between urban and rural areas. This puts Poland at a low rank 22 out of the 27 countries participating in the survey.

Those Polish teachers using ICT in class seem to use it frequently and intensively. Almost 50% use ICT in class in more than a quarter of their lessons while this is the case only among slightly more than a third at the European level.

Teachers in vocational schools use computers in class much more frequently than their colleagues in general education with a very high 72% using computers in more than a quarter of their lessons. A high 39% of teachers in Poland still do not use computers in class. When asked for the most important barrier, 45% state a lack of computers in their schools as an important barrier.

Virtually all schools are at least equipped with some computers in Poland but there seems to be some substantial scope for further ICT-infrastructure improvements at Polish schools such as an increase of the number of computers in total and per pupil where Poland – together with Latvia and Lithuania – ranks at the tail end in Europe with just 6 computers available for 100 pupils and only less than 30% of schools with a broadband internet connection.

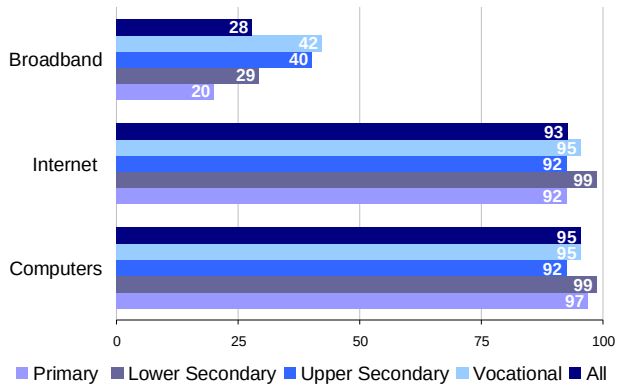
However, ICT competence and motivation to use ICT do not seem to constitute a barrier. Only a very low 1% of all and 3% of those not using ICT are not convinced of any benefits of using computers in class and another only 6% express the opinion that teachers lack the necessary skills to utilize computers in their teaching. Just 2% state lack of interest of teachers as a barrier. With these figures, Poland belongs to the best performers in Europe on perceived teacher's competence for and interest in using ICT in class.

50% of the Polish teachers state that they have sufficient access to the internet at school, the necessary competence in using ICT in class and are motivated to its use. With this figure Poland ranks 4th, placing the country among the top countries in Europe. These results need to be treated with some caution since they disclose the weaknesses of the "access" indicators used for the calculations in the ACM model. They are based on self assessments and the perceived level of ICT equipment in schools and of the quality of the internet access which are perceived as rather positive by most teachers despite the actual situation placing Poland at the tail end of countries in Europe on these items.

ICT Equipment and Internet in Schools

Almost all Polish schools now use computers for teaching (95%) and have internet access (93%). However, only 28% use the internet via a broadband connection. With this figure Poland ranks second last among the 27 countries participating in the survey. In Poland by far the largest percentage of schools are still connected to the internet by a narrowband connection. This is five fold the European average.

Percentage of Schools Using Computers, Internet Connection, and Broadband Internet Access According to School Type in Poland 2006

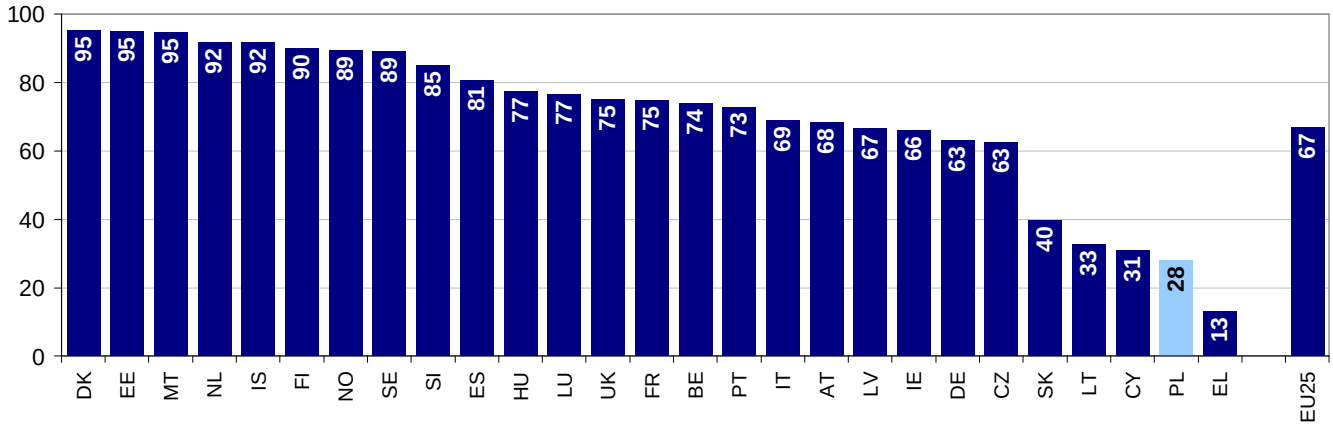


***Source:** LearnInd HTS 2006; **Base:** All schools; **Question:** Computers: Q6; Internet, Broadband: Q9. See questionnaire for exact wording.*

There is a large variation between school types: while only 20% of primary schools have a broadband internet

connection, the penetration is highest among upper secondary schools, with 40% and vocational schools reaching 42%. There is also some variation with regard to broadband access between urban and rural areas: 40% of schools in densely populated areas have broadband access compared to 21% of schools in thinly populated areas.

Percentage of Schools with Broadband Internet Access in Europe 2006



Source: *LearnInd HTS 2006;* ***Base:*** *All schools;* ***Question:*** *Q9. See questionnaire for exact wording.*

68% of schools have a website, 33% offer e-mail to teachers, and 19% do so to pupils. Only a very low 23% of the Polish schools using computers for teaching use them in classrooms, with the highest percentage being achieved in upper level schools.

Those schools with a broadband connection to the internet are much more likely to have a more sophisticated ICT infrastructure including a school website, the use of a LAN or the availability of an intranet.

The use of Computers and the Internet in Schools

Computers are used for various purposes and as part of teaching different subjects in schools but also and very widely as a separate subject.

Computer sciences are taught as a separate subject in a very high 96% of Polish schools (the third highest figure in Europe) with hardly any variation across school types.

61% of Polish classroom teachers had used computers in class in the 12 months prior to the survey, with very little variation across school types and between urban and rural areas. For most teachers, this includes not only using a computer for presentation purposes but also the use of computers by pupils in class. This puts Poland at a low rank 22 out of the 27 countries participating in the survey.

Those Polish teachers using ICT in class seem to use it frequently and intensively. Almost 50% use ICT in class in more than a quarter of their lessons while this is only the case among slightly more than a third at the European level.

ICT equipment in Polish schools 2006

				Educational Level (PL)				Type of locality (PL)			Internet Access (PL)	
	Total PL	Total EU25	Total NMS10	Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated	Narrow-band	Broadband
Computers per 100 pupils [a]	6.1	11.3	7.1	5.6	5.7	7.3	7.2	5.8	5.8	7.2	6.4	5.8
... of which internet connected	5.6	9.9	6.4	4.7	5.2	7.0	6.8	5.5	5.3	6.1	5.7	5.6
Percentage of schools having...												
Computers for teaching [b]	95.3	98.7	96.7	97.0	98.7	92.4	95.3	97.0	95.1	94.1	100.0	100.0
Internet access [c]	92.7	96.2	94.7	92.4	98.7	92.4	95.3	97.0	92.2	89.6	100.0	100.0
Broadband internet access [d]	27.9	66.9	43.4	20.1	29.3	40.2	42.3	40.1	24.7	20.8	0.0	100.0
A website [e]	68.0	63.0	66.7	54.7	82.2	85.6	89.1	89.7	71.2	48.7	69.6	82.2
An e-mail address for the majority of teachers [f]	33.3	65.2	48.1	30.6	37.9	38.0	33.7	35.5	32.8	32.0	37.8	31.7
An e-mail address for the majority of pupils [g]	18.9	23.5	24.4	16.1	24.5	21.8	17.5	24.5	17.0	15.9	21.0	18.9
A LAN [h]	55.9	55.2	60.4	49.6	63.3	66.5	72.3	70.4	53.0	46.8	52.6	78.2
An intranet [i]	25.5	40.8	26.9	24.3	26.3	26.9	36.2	33.6	23.1	20.9	23.5	36.8
An external support or maintenance contract [j]	35.6	47.1	44.3	31.9	41.0	40.5	34.8	39.6	34.0	33.7	39.4	36.2
Percentage of schools using computers for education in...												
Computer labs [k]	97.1	80.5	94.6	96.0	99.4	98.8	100.0	98.9	96.9	95.7	98.6	97.9
Classrooms [l]	22.7	61.4	29.5	18.7	23.9	30.4	28.8	26.6	19.4	22.1	21.8	23.0
School library [m]	39.2	33.4	36.8	30.6	48.2	53.1	52.9	54.9	36.3	28.7	36.3	49.6
Other locations accessible for pupils [n]	20.6	27.0	20.2	18.3	17.8	29.5	24.4	22.7	21.9	18.0	21.1	20.2

Source: *LearnInd HTS 2006;* ***Base:*** *a: all pupils; b-j: all schools, k-n: schools using computers for educational purposes for pupils (cf. index b);* ***Question:*** *a: Q4, Q6, Q7; b: Q6; c: Q9; d: Q9; e-j: Q12; k-n: Q8. See questionnaire for exact wording.*

Use of computers in class in Poland 2006

Assessments of the head teacher		Total PL	Total EU25	Total NMS10	Educational Level (PL)				Type of locality (PL)			Internet Access (PL)	
					Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated	Narrow-band	Broadband
Computer sciences taught as separate subject	Agree	96.3	54.7	91.2	96.0	98.3	95.9	93.4	95.9	97.0	96.1	97.2	96.4
	Disagree	3.2	43.7	8.4	3.7	1.2	2.5	4.1	2.6	3.0	3.9	2.5	2.6
	Don't know	0.5	1.6	0.4	0.3	0.5	1.6	2.4	1.4	0.0	0.0	0.2	1.0
Computers and the internet are													
integrated into teaching of most subjects	Agree	73.8	75.3	73.1	73.5	74.5	76.0	76.3	68.2	78.3	74.9	76.5	70.6
	Disagree	26.0	24.1	26.4	26.2	25.5	24.0	23.7	31.8	21.7	24.5	23.5	29.4
	Don't know	0.2	0.6	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0
used for teaching traditional subjects or basic skills	Agree	86.5	75.8	72.3	88.4	86.9	85.2	86.5	85.3	86.3	87.7	86.9	87.0
	Disagree	12.1	22.8	26.0	11.6	11.7	12.1	11.2	13.8	10.9	11.8	11.6	11.8
	Don't know	1.3	1.4	1.7	0.0	1.4	2.6	2.4	0.9	2.9	0.5	1.4	1.3
used for teaching foreign languages	Agree	66.2	56.6	71.1	60.2	66.6	80.1	76.1	73.6	63.9	62.0	64.1	72.6
	Disagree	33.4	40.1	28.0	39.0	32.0	19.9	23.9	26.4	35.3	37.5	35.2	27.4
	Don't know	0.4	3.3	0.8	0.8	1.4	0.0	0.0	0.0	0.8	0.5	0.7	0.0
used for teaching students with special needs/ handicaps	Agree	55.7	71.7	58.3	63.7	62.0	44.1	42.3	46.7	56.4	62.5	55.8	54.6
	Disagree	30.8	23.7	31.6	27.6	22.6	34.0	39.0	34.6	29.2	28.9	29.7	33.1
	Don't know	13.5	4.6	10.1	8.8	15.4	21.9	18.7	18.7	14.4	8.6	14.6	12.3

Source: *LearnInd HTS 2006;* ***Base:*** *All schools using computers for educational purposes for pupils;* ***Question:*** *Q13: "To what extent do you agree or disagree with the following statements regarding the educational use of computers and/or the internet in your school?"*

Teachers in vocational schools use computers in class much more frequently than their colleagues in general education, with a very high 72% using computers in more than a quarter of their lessons as opposed to 41% in primary schools, 48% in lower secondary and 60% in upper secondary schools.

Polish teachers using computers do not restrict themselves to a particular source of information but use a multitude of different material from a variety of sources for teaching purposes. However, usage figures are in all categories mostly below the European average.

The learning material used most by Polish teachers includes offline learning materials such as CD-ROMs. This applies to 85% of teachers with hardly any variation according to school type. Teachers working in schools in urban areas are the more intensive ICT users compared to those in rural areas.

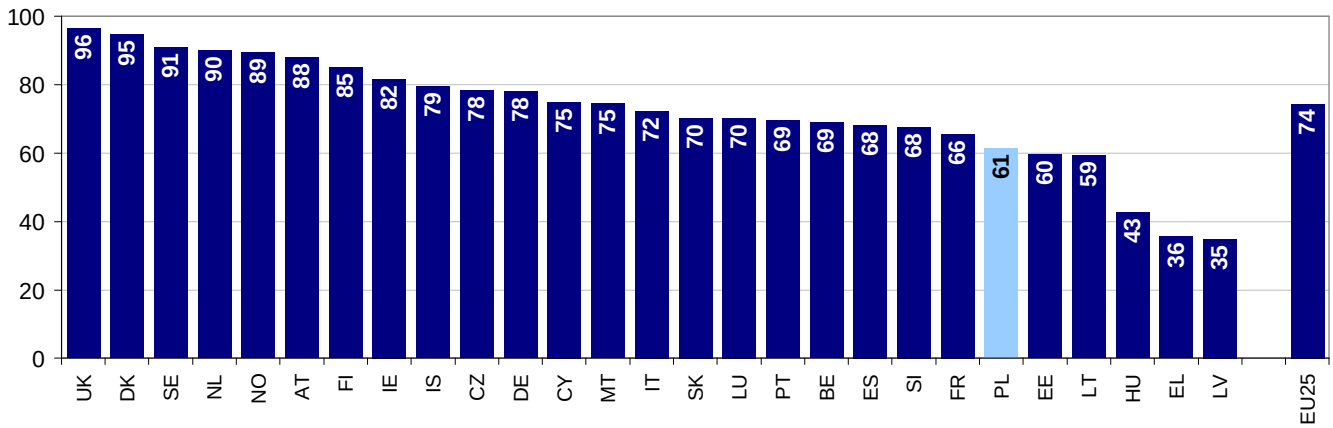
Not surprisingly, the older the teachers (indicator used here: years of teaching experience), the less use they make use of computers and the internet in schools.

While 57% of the younger teachers are heavy ICT users in class (in more than 50% of their lessons), the figure goes down to 50% among those with 10-20 years teaching experience and 43% among those with more than 20 years teaching experience.

A high 39% of teachers in Poland still do not use computers in class. When asked for the most important barrier, 45% state a lack of computers in their schools as an important barrier.

This results in a situation where the statement “lack of equipment in school” is expressed by a substantial 18% of all Polish teachers (39% non-users multiplied with 45% of teachers agreeing to this item).

Percentage of teachers who have used computers in class in the last 12 months (2006)



Source: *LearnInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *Q7. See questionnaire for exact wording*

Teachers' use of computers in class in Poland 2006

Percentage of teachers who …	Total PL	Total EU25	Total NMS10	Educational Level (PL)				Type of locality (PL)			Years of teaching experience (PL)			
				Primary	Lower secon-dary	Upper secon-dary	Voca-tional	Densely popu-lated	Inter-mediate	Thinly popu-lated	<5 y	5-9 y	10-19 y	20+ y
...have used computers in class[1]	61.4	74.3	61.3	60.2	60.3	67.1	70.9	60.8	63.1	60.7	53.9	55.2	69.6	59.0
…use a computer in class to present or demonstrate	54.5	63.4	55.5	54.2	53.2	57.9	56.5	51.8	56.5	55.0	49.7	47.1	63.1	51.1
…have pupils use a computer in class	53.0	66.3	53.8	53.5	49.3	55.3	62.5	50.1	52.7	55.5	41.0	47.7	58.3	54.0

Source: *LearnInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *Q7 "How have you used computers and/or the internet for work in the last 12 months?" .*

Frequency of computers use in class Poland 2006

Percentage of all teachers *using computers in class* who …	Total PL	Total EU25	Total NMS10	Educational Level (PL)				Type of locality (PL)			Years of teaching experience (PL)			
				Primary	Lower secon-dary	Upper secon-dary	Voca-tional	Densely popu-lated	Inter-mediate	Thinly popu-lated	<5 y	5-9 y	10-19 y	20+ y
…use computers in 5% and less of all lessons	11.5	18.5	15.0	14.3	12.0	6.9	7.4	7.8	12.4	13.8	9.8	12.4	11.0	12.1
in 6 to 10% of lessons	16.6	22.5	17.7	17.3	17.0	15.2	10.2	14.0	19.2	16.8	11.6	16.9	14.7	19.9
in 11 to 24% of lessons	23.3	22.2	22.1	27.9	23.4	18.0	10.3	18.4	23.0	27.3	22.2	18.4	24.1	24.4
in 25 to 50% of lessons	24.6	20.2	24.0	23.8	28.9	24.6	28.0	26.8	21.9	24.9	25.8	27.9	20.4	27.3
more than 50% of lessons	24.0	16.5	21.3	16.7	18.8	35.4	44.1	33.0	23.6	17.3	30.6	24.5	29.8	16.2

Source: *LearnInd CTS 2006;* ***Base:*** *Teachers using computers in class, "don't know" answers excluded;* ***Question:*** *Q9 "For what percentage of time have you used computers and/or the internet in class when teaching your main subject(s) in the past 12 months?"*

Source of educational material used in class in Poland 2006

Percentage of all teachers *using computers in class*[2] who …	**Total PL**	**Total EU25**	**Total NMS10**	**Educational Level**				**Type of locality**		
				Primary	**Lower secondary**	**Upper secondary**	**Vocational**	**Densely populated**	**Inter-mediate**	**Thinly populated**
…use material they have searched the internet for	80.1	82.7	81.8	75.1	83.1	85.5	79.3	81.6	82.5	77.0
…use existing online material from established educational sources	64.7	74.2	61.8	60.3	66.1	73.6	67.1	72.3	65.3	58.3
…use material that is available on the school's computer network or database	42.2	63.1	52.7	41.7	43.1	46.3	43.6	44.2	46.3	37.4
…use electronic offline material (such as CD ROMS)	84.9	83.0	82.2	86.7	86.3	84.5	83.6	87.8	86.2	81.6
…use other learning material when using computers in class	13.1	8.8	10.8	12.7	15.8	18.7	14.4	19.4	11.7	9.2

Source: *LearnInd CTS 2006;* ***Base:*** *Teachers using computers in class;* ***Question:*** *Q10 "Which of the following types of materials have you used when teaching your main subject(s) with the aid of a computer and/or the internet*

Barriers to computer use in class in Poland 2006

Percentage of all teachers ***not*** *using computers in class*	**Total PL**	**Total EU25**	**Total NMS10**	**Educational Level**				**Type of locality**		
				Primary	**Lower secondary**	**Upper secondary**	**Vocational**	**Densely populated**	**Inter-mediate**	**Thinly populated**
Lack of computers	44.8	48.8	49.0	43.4	36.5	53.1	*45.8**	49.4	42.4	42.9
Lack of adequate con-tent/material	15.6	20.3	16.5	18.3	13.8	12.1	*12.9**	16.3	16.5	14.5
Lack of content in national language	4.3	8.6	5.7	3.2	4.0	7.2	*1.6**	3.2	4.2	5.3
Lack of adequate skills of teachers	6.2	22.5	9.8	6.0	8.2	2.8	*9.0**	6.2	5.3	6.8
No or unclear benefits	3.2	16.2	6.8	3.9	3.1	3.1	*8.3**	3.0	3.0	3.6
Lack of interest of teach-ers	2.2	8.9	3.3	1.8	5.4	0.7	*0.0**	1.6	1.8	3.0
Subject does not lend itself to being taught via computers	23.6	24.4	25.0	20.8	30.9	30.5	*34.7**	23.7	25.6	22.1
Other	22.8	21.3	20.3	22.8	23.7	21.2	*18.8**	21.1	19.4	26.5

Source: *LearnInd CTS 2006;* ***Base:*** *all teachers not using computers in class;* ***Question:*** *Q12: "Why do you not use computers and/or the internet when teaching in class?"* ***Notes:*** *"xx.x*": based on at least 10 and less than 50.*

Virtually all schools in Poland are equipped with at least some computers, so that the above statement suggests some scope for further ICT-infrastructure improvements at Polish schools such as an increase of the number of computers in total and per pupil where Poland – together with Latvia and Lithuania – ranks at the tail end in Europe with just 6 computers available for 100 pupils.

However, ICT competence and motivation to use ICT do not seem to constitute a barrier. Only a very low 1% of all and 3% of those not using ICT are not convinced of any benefits of using computers in class and another only 6% express the opinion that teachers lack the necessary skills to utilize computers in their teaching. Just 2% state lack of interest of teachers as a barrier. With these figures, Poland belongs to the best performers in Europe on perceived teacher's competence for and interest in using ICT in class.

Attitudes on the Usefulness of ICT use in Teaching

Computers and the internet have arrived in Polish schools but the level of equipment of schools is low, with just 6 computers per 100 pupils and only less than 30% of schools with a broadband internet connection.

The share of teachers in Poland – but also in the European Union in general – who believe that computers and the internet should not at all be used in schools, is very low and below 1%.

Polish teachers have positive attitudes about the different applications of ICT in teaching and achieve average or below average figures on attitudes that ICT should be used for letting pupils do exercises and practise (76%), letting pupils retrieve information in a self-directed manner (87%) and for collaborative and productive work by pupils (60%). There are only minor differences across school types.

Attitudes on the Usefulness of ICT use in Teaching in Poland 2006

Percentage of teachers saying computers/internet should be used for …	Total PL	Total EU25	Total NMS10	Educational Level				Type of locality		
				Primary	Lower secondary	Upper secondary	Vocational	Densely populated	Inter-mediate	Thinly populated
Letting pupils do exercises and practise	76.1	79.9	78.8	75.6	78.3	76.2	80.8	78.6	76.9	73.5
Letting pupils retrieve information in a self-directed manner	87.2	85.0	87.8	85.2	88.2	90.7	89.7	89.4	88.0	84.9
Teaching about office tools	45.1	61.3	51.0	38.9	44.5	60.4	64.7	53.2	42.7	40.7
Collaborative and productive work by pupils	59.9	80.5	67.2	57.3	62.9	64.0	61.5	65.0	58.1	57.4
Computer/internet should not be used for any of these in teaching	0.4	0.6	0.5	0.5	0.6	0.0	0.0	0.8	0.3	0.2

Source: *LearnInd CTS 2006;* ***Base:*** *all teachers;* ***Question:*** *Q13: "What do you think for what computers and the internet should be used for in teaching?"*

Access, Competence and Motivation for Using ICT and the Internet in Schools

Access

De facto, the level of ICT equipment and quality of internet access in schools is at a rather poor level in Poland as already outlined above.

However, a majority of Polish teachers are still more or less satisfied with the technical access means in their schools: 78% state that their school is well equipped with computers and 80% express the opinion that their internet connection is fast enough. Teachers in upper level schools express this opinion more often than those in lower level schools. 60% wish there were better support and maintenance actions taken. Here lower level schools seem to have more problems.

Competence in using ICT

Polish teachers feel most competent in using e-mail and using a text processor programme but are less confident with downloading and installing software and with using presentation software packages.

There are hardly any differences in the perceived levels of ICT competence according to school type. Only around a quarter of the teachers state that teachers in their schools do not have sufficient computer skills compared to 42% at the EU25 level.

Motivation for ICT use in Schools

Motivation for ICT use in class is very high in Poland. 92% of Polish teachers see significant learning benefits for pupils using computers in class and say that pupils are more motivated and attentive when computers and the internet are used in class. This is further strengthened by the fact that only 4% do not see significant learning benefits for pupils when using computers in class. Only Malta achieves an even better performance on "motivation for ICT use in class" in Europe.

ICT Readiness of Teachers – the ACM Model

The ACM model as developed by Viherä and Nurmela (2001)[3] was applied in LearnInd to generate a typology according to the "propensity to the use of computers and internet by teachers in classroom situations at schools".

The typology in the figure below takes account of the three main categories of preconditions which need to be given for a school to make use of computers and the internet in the teaching process in classrooms, computer labs etc.

These are: access (to computers and the internet at school), competence (in using the computer software and the internet, and applying it for teaching purposes), and motivation (gauged through the attitude that using computers in classrooms results in significant learning benefits).

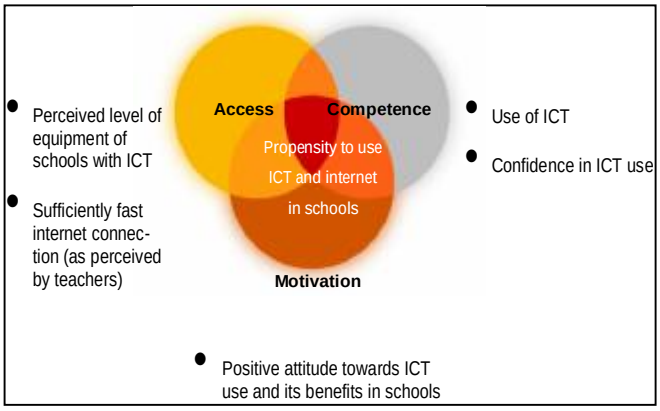
Teachers' access, competence and motivation for using ICT in class 2006

Percentage of teachers agreeing or strongly agreeing:	Total PL	Total EU25	Total NMS10	Educational Level: Primary	Lower secondary	Upper secondary	Vocational	Subject of teaching: General primary	Literature and languages	Humanities and social sciences	Science, maths, computer sciences	Physical, artistic, crafts education	Vocational education
Access													
Our school is well equipped with computers [a]	78.4	74.2	76.5	75.1	80.9	84.8	85.3	71.8	78.8	79.6	81.3	75.6	77.8
The internet connection we have is sufficiently fast [b]	79.6	77.2	78.2	72.6	85.8	90.3	87.0	68.0	81.6	86.4	80.9	78.6	*82.2**
Better technical maintenance and support is required in our school [c]	60.4	64.8	64.6	63.4	62.6	56.0	50.7	67.2	61.2	60.5	56.4	64.1	*58.1**
Existing teaching materials on the Internet are of poor quality [d]	28.7	29.9	29.3	28.2	26.9	34.2	37.2	28.0	27.5	29.4	27.8	35.9	41.4
It is hard to find adequate learning materials for teaching [e]	23.1	38.7	30.5	22.9	27.3	20.8	23.7	22.2	20.5	18.9	24.3	22.1	41.1
Motivation													
Pupils are more motivated and attentive when computers and the internet are used in class [f]	92.2	86.3	90.1	92.8	89.4	90.0	91.5	93.9	90.1	90.2	92.7	93.2	93.4
Using computers in class does not have significant learning benefits for pupils [g]	3.6	20.7	9.5	4.0	4.3	4.2	3.9	3.4	3.8	3.2	3.4	5.2	3.6
Competence													
Teachers in our school do not have sufficient computer skills [h]	24.7	42.0	30.6	24.5	24.7	27.3	25.8	24.7	27.0	18.0	25.7	28.1	*25.3**
Competence / computer skills (Percentage of teachers who feel very confident at…)													
Using text processors [i]	62.1	65.0	63.2	55.6	62.8	75.3	77.3	42.2	53.0	53.6	74.9	*54.6**	*52.5**
Creating electronic presentations [j]	41.4	34.0	41.0	34.1	41.7	55.4	55.2	23.7	25.7	25.8	58.6	*39.7**	*33.1**
Using e-mail [k]	60.2	65.9	64.8	49.7	62.6	79.4	78.4	36.4	59.5	55.9	68.1	*54.8**	*61.1**
Downloading and installing software [l]	36.0	35.8	34.6	28.5	35.2	52.2	55.1	23.2	23.1	22.5	49.3	*35.1**	*21.3**

Source: *LearnInd CTS 2006;* ***Base:*** *a-h All teachers; i -l Teachers using computers in class* ***Question:*** *a-h Q14, i-l Q11.* ***Notes:*** *"xx.x*": based on at least 10 and less than 50 cases.*

Any attempt to group the classroom teachers according to their propensity to becoming users of computers and the internet in their teaching processes needs to take account of these three dimensions. In the present application of the ACM model data from the Classroom Teacher Survey (CTS) was used. Therefore "access" for instance is to be understood as a perceived level of computer equipment at schools and teachers' satisfaction therewith rather than an objective measure of equipment status.

The Access-Competence-Motivation Model



38% of European teachers dispose of sufficient access to the internet at school, the necessary competence in using ICT in class and are motivated to its use. With 50% of the teachers stating that they belong to this group, Poland ranks at 4th, placing the country among the top countries in Europe. Overall the UK with 60% ranks top and Latvia with 15% finds itself at the very end.

The as yet insufficient internet connection in many schools and a lack of motivation of teachers for using ICT are the most critical issues for a wider uptake of computers and the internet in schools in Europe. 20% of European teachers indicate insufficient computer equipment and the low speed of internet connection at their school as a key barrier. 14% show a lack of motivation, i.e., they are of the opinion that using computers in class does not result in significant learning benefits.

Access, Motivation and Competence of Teachers for Using ICT in Schools in Poland 2006

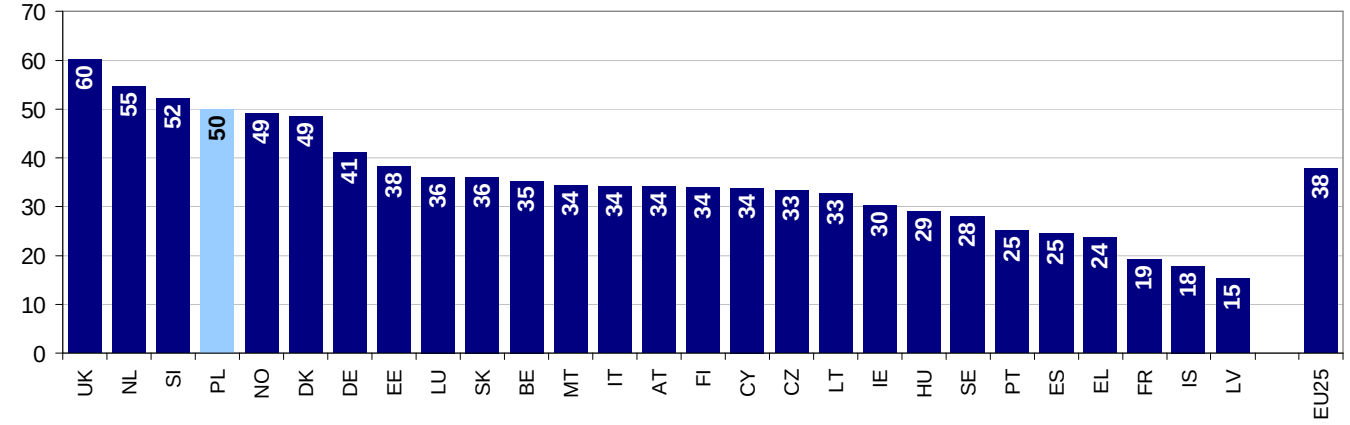
PL	EU25	Access	Competence	Motivation
1.9	4.3	~~Access~~	~~Competence~~	~~Motivation~~
2.6	3.9	**Access**	~~Competence~~	~~Motivation~~
3.1	9.7	~~Access~~	**Competence**	~~Motivation~~
6.9	5.0	~~Access~~	~~Competence~~	**Motivation**
5.4	13.7	**Access**	**Competence**	~~Motivation~~
7.4	4.8	**Access**	~~Competence~~	**Motivation**
22.9	20.7	~~Access~~	**Competence**	**Motivation**
49.9	37.9	**Access**	**Competence**	**Motivation**
100	100			

Percentage of teachers. ***Source:*** *LeanInd CTS 2006;* ***Base:*** *All teachers;* ***Question:*** *See endnote* [4]

The situation in Poland is very similar to the overall situation in the EU25 when it comes to "access" with figures very close to the European ones but not in relation to "motivation" where the Polish performance is better.

These results need to be treated with some caution since they disclose the weaknesses of the "access" indicators used for the calculations in the ACM model. They are based on self assessments and the perceived level of ICT equipment in schools and of the quality of the internet access which are perceived as rather positive by most teachers despite the actual situation which is placing Poland at the tail end of countries in Europe on these items.

ICT Readiness of Teachers in Poland: Percentage of Teachers Fully Ready to use Computers in Class (ACM Indicator) 2006



Source: *LeanInd CTS 2006;* ***Base:*** *All teachers.* ***Question:*** *See endnote 5*

ANNEXES

Methodology Report

Universe / Sample population

In order to assure the comparability of school levels in all countries UIS-OECD-EUROSTAT "Mapping of national education programmes to ISCED 97 for school academic/year 2002/2003" [5] was used for composing the sample frame. Based on this, each country divided its school system into ICSED codes and made different combinations that existed in its country.

Sampling frame and method

The sample was composed using official databases, which contained contact data of schools. In the majority of countries the sample was drawn from a database received from the Ministry of Education.

For each country a separate template of sample frames was composed by TNS Emor. These templates contained data about school types across regions as well as location type. School types were defined based on the ISCED codes provided in UIS-OECD-EUROSTAT. Location type distribution was made according to the Eurostat type of locality classification which differentiates densely populated, intermediate and thinly populated municipalities[6]. Apart from that, each country was divided into 3-7 regions depending on the size of a country.

Based on the data provided by countries, TNS Emor composed quotas for each country. Two level stratification was used – quotas for first stage, random sample for second. The quotation for region by school type and location type was endorsed. Simple random selection was conducted by the local agency or the local source of the contact base. Both private and public schools were included in the sample. It was also obligatory to include schools of other teaching languages than the official language of a country in the sample.

Simple random sampling was used inside a quota cell. This means that if the quota for primary schools in region1 was 100 and the total number of primary school in this region was 800, then a random sample selection was be made among those 800 schools. This covered also both private and public schools and schools of other teaching languages than the official language of a country.

No more than 50% of interviews could be made in one school level. At least 10% of respondents had to be from schools, which provided professional/vocational or combined programme of vocational and upper secondary level education (in case a country did not have special quota for those schools). It did not matter whether vocational education level was coded as ISCED 3 or ISCED 4.

There were no duplications in samples of head teacher and classroom teacher surveys. This was only allowed in countries with small universe sizes (e.g. Malta, Cyprus, Iceland, Estonia, Latvia etc) and in cases where the last quota cells were very difficult to achieve or there were not enough schools of a certain type. The priority was to include as many different schools as possible. In both surveys, 5 attempts were made before giving up and only if the respondent refused was this person not contacted again.

The CATI programme generated a randomly chosen letter. The interviewer asked for the person with a surname that started on the generated letter. If there was more than one teacher whose surname started with the selected letter, the person who was first alphabetically was chosen. If the correct person was not available, an appointment was made. At least 5 attempts were made before taking another teacher.

Only in Malta, due to instructions dictated by the Education Department, would the Head Teacher randomly select a teacher who would be available for an appointment during which they would be interviewed.

Number of interviews conducted (HTS / CTS)

Country		Head Teachers	Classroom teachers
BE	Belgium	450	807
CZ	Czech Republic	500	1000
DK	Denmark	315	848
DE	Germany	450	901
EE	Estonia	400	851
EL	Greece	500	1000
ES	Spain	518	1022
FR	France	501	869
IE	Ireland	403	626
IT	Italy	500	900
CY	Cyprus	150	600
LV	Latvia	451	902
LT	Lithuania	457	908
LU	Luxemburg	82	277
HU	Hungary	500	1000
MT	Malta	100	200
NL	Netherlands	515	890
AT	Austria	320	450
PL	Poland	500	1000
PT	Portugal	450	900
SI	Slovenia	253	460
SK	Slovakia	502	1000
FI	Finland	318	601
SE	Sweden	200	450
UK	United Kingdom	450	905
IS	Iceland	177	424
NO	Norway	494	708
TOTAL		**10456**	**20499**

Fieldwork

Fieldwork was coordinated by the TNS Emor and conducted in cooperation with its local TNS offices excluding Iceland, Cyprus, Austria, Slovenia and Malta where TNS does not have offices. In these countries partners with whom TNS had previous experience were used.

Pilot interviews prior to the regular fieldwork were conducted with 20 schools in both target groups in Estonia and Greece in February 2006, in order to test the questionnaire (structure, comprehensibility of questions).

Between March and April 2006, surveys among head teachers (head teacher survey - HTS) and classroom teachers (CTS) were carried out in 27 European countries. TNS Emor was responsible for the fieldwork.

Weighting schemes

After the fieldwork, weighting coefficients were computed using region, location type and school type.

Statistical accuracy of the survey: confidence intervals

Statistics vary in their accuracy, depending on the kind of data and sources. A "confidence interval" is a measure that helps to assess the accuracy that can be expected from data. The confidence interval is the estimated range of values on a certain level of probability of error. Confidence intervals for estimates of a population fraction (percentages) depend on the sample size, the probability of error, and the survey result (value of the percentage) itself. Further to this, variance of the weighting factors has negative effects on confidence intervals.

The calculation of confidence intervals is based on the assumption of (quasi-) infinite population universes. In practice, however, in some countries and for some school levels the complete population of schools consists of only several hundred or even a few dozen of schools. In some cases, literally each and every school within a country-school type cell was contacted and asked to participate in the survey. This means that it is practically impossible to achieve a higher confidence interval through representative school surveys in which participation is not obligatory.

Country Background Data

Poland is the largest EU new member state with a large percentage of inhabitants living in rural areas, one of the lowest fertility rates and a high infant mortality rate. The GDP per capita is far below average and only undercut by Lithuania and Latvia.

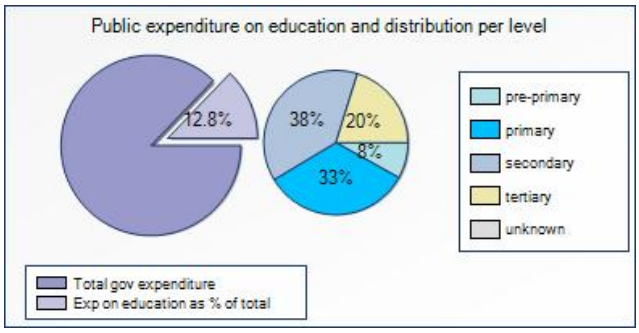
General Population Data for Poland 2002/03[7]

Total population (000)	38,622
Annual population growth rate (%)*	-
Population 0-14 years (%)	18
Rural population (%)*	37
Total fertility rate (births per woman) *	1.2
Infant mortality rate (0/00) *	8
Life expectancy at birth (years) *	74
GDP per capita (PPP) US$ *	10,707
GDP growth rate (%)*	1.4
* World Bank World Development Indicators	

Resources for Education in Poland 2002/03

Pupil / teacher ratio (primary)	13
Public expenditure on education :	
as % of GDP	5.6
as % of total government expenditure	12.8
Distribution of public expenditure per level (%):	
pre-primary	8
primary	33
secondary	38
tertiary	20
unknown	-

Resources for Education in Poland 2002/03



The Educational System in Poland[8]

In 2004, the number of young people under 29 years of age (15,844,000) accounted for 41.5% of the population, and 5,150,000 children were of compulsory school age The language of instruction is Polish.

In 2004/05 almost all pupils attended public-sector schools (98%). Most of the funds come from the state budget. The administration, organization and decisions relating to the use of financial resources by schools are the subject of consultation between the school and the body running the school, i.e. local authorities (*gminy*) and district authorities (*powiaty*). The inspection of teaching standards in schools comes directly under the Ministry of National Education and is represented by a regional administrative body (*kuratorium*).

The use of ICT in Education[9]

One of the main goals set up by the Programme “Education and Training 2010” is to improve general access to education. This is to be achieved through the purchase of specialist equipment to facilitate the education of disabled pupils, the provision of computer hardware and software to Internet multimedia information centres, as well as the updating of resources and the broadening of contents in the Internet educational portal. Access to education for the society should also be increased through the development of distance education programmes, materials and methodologies at post-gymnasium (i.e. upper secondary) level, and of higher education programmes in selected fields of study.

Secondly, a wider usage of IT in training in the area of counselling and career guidance should be ensured, and equipment modernised, through projects which will provide

computer equipment with Internet access to schools, teacher training establishments, continuing education and practical training centres, and counselling and career guidance services. Other projects aiming to contribute to the wider use of modern technologies and improvement in educational processes include the establishment of a database covering accredited institutions, currently at the planning stage, and the provision of specialist workstations for external vocational examinations to continuing education and practical training centres and selected vocational schools.

In-service training of school education staff: New projects, launched in 2005, focus on in-service training of school education staff, i.e. teachers, trainers and school administration staff. In-service training will be provided in the form of postgraduate programmes or courses for graduates entering the teaching profession in the areas of IT, foreign languages and second-subject teaching, special education and the methodology for teaching vocational subjects and general vocational subjects.

A concept of distance education provision has been developed. A postgraduate training programme for distance education teachers, "Tools and Techniques for Virtual Education", is provided through the Internet. The teachers trained will be involved in the establishment of a cross-country network of Internet-based distance education centres. In the framework of a project co-financed by the structural funds, training programmes and multimedia packages will also be developed for this purpose.

The Study

There is a lack of information on the actual use of ICT for learning in schools and for supporting political action in potential future programmes. It is necessary to clarify matters such as the educational vision of heads of schools, the current impact of ICTs on teachers' practice, support and training and on other factors for success in e-learning.

The objective of the study is to obtain estimates for the eEurope 2005 indicator on e-learning "number of pupils per computer with Internet connection (broadband/non-broadband)" and relate it to other possible indicators of educational use of ICT in compulsory education (e-learning in schools). The study looks at how Information and Communication Technologies (ICT) are used in schools.

The study is a continuation of the earlier benchmarking exercise for eEurope 2002.

It involved two surveys. Firstly of head teachers to obtain information on the schools and then of teachers to focus on their use of ICTs in the teaching process

This exercise is part of the Information Society monitoring and benchmarking process for which the Commission in cooperation with the Council defined benchmarking indicators.

Country Briefs

This document has been prepared by **empirica** based on own desk research and the above mentioned primary data sources: Head Teacher Survey (HTS) 2006 and Classroom Teacher Survey (CTS) 2006 in the EU25 member states, Iceland and Norway.

Altogether 27 LearnInd Country Briefs are available in a common format, one for each member of the enlarged European Union, Norway and Iceland.

A final report has also been developed. It includes approximately 100 exhibits, more than 250 data tables and a report about the key results.

You can access and download these documents in PDF format (for free) from http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm.

More information

Check our results and achievements on: http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm. If you wish to be provided with more details, or to receive news and updates, please contact us at: **learnind@empirica.com** or get in touch with us.

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1 Note that "in class" means during lessons while teaching and does not denote a particular location such as a classroom.

2 Base (100%) = all teachers who have used a computer in class in the last 12 months.

3 Viherä, M-L, Nurmela, J (2001) "Communication Capability Is an Intrinsic Determinant for Information Age", in Futures, Volume 33, Issue 3-4:245-265.

4 Synthetic indicators: Access: Q14 (2) "Our school is well equipped with computers" and Q14 (3) "The internet connection we have is sufficiently fast ".

Competence: Q11 How confident do you feel... a) using a text processor, b) creating a presentation c) using e-mail, d) downloading and installing software. Threshold: Average of 2.5 or more on a 1-4 confidence scale

Motivation: Q14 (8); disagree with "Using computers in class does not result in significant learning benefits".

For full question wordings refer to questionnaire.

5 http://forum.europa.eu.int/Public/irc/dsis/edtcs/library?l=/public/unesco_collection/programmes_isced97&vm=detailed&sb=Title

6 Densely populated area refers to a set of closely related local units, each one of which having a density greater than 500 inhabitants per km2, and the total population of which being of at least 50 000 inhabitants; Intermediate area refers to a set of closely related local units that do not pertain to a densely populated area, each one of which having density greater than 100 inhabitants per km2, and where the total population is at least of 50 000 inhabitants or it refers to a set that is adjacent to a highly populated area. Thinly populated area (rural): refers to a set of closely related local units that are not part of a densely populated area, or of an intermediate area. (A set of local areas totalling less than 100 km², not reaching the required density, but entirely enclosed within a densely-populated or intermediate area, is to be considered to form part of that area. If it is enclosed within a densely-populated area and an intermediate area it is considered to form part of the intermediate area).

7 Source: http://www.uis.unesco.org/profiles/selectCountry_en.aspx (visited 28 March 2006)

8 Source: http://www.eurydice.org/Documents/struct2/frameset_EN.html (visited: 28 March 2006)

9 Source: http://europa.eu.int/comm/education/policies/2010/nationalreport_en.html (visited: 9 May 2006)